3 Findings

This chapter examines the cancers diagnosed in Korean War veterans and compares the incidence of these cancers to the rates of cancer of the male population in Australia. The comparisons are only made for the cancers diagnosed in the period 1982–1999 because complete data on cancer incidence in Australia are only available from 1982. This means that cancers developed in the period between the war and 1982 are not considered in this study.

Notwithstanding this, the Study Consultative Committee requested that mention be made of cancers likely to have occurred prior to 1982 that would have been of concern to the study. Such cancers would include both acute myeloid leukaemia (AML) and melanoma.

Of these, AML in the period prior to 1982 was almost always fatal. Accordingly, incidences of AML during that period will form part of the data reported in the Korean War Veterans' Mortality Study.

Melanoma, however, if it is picked up early enough and removed surgically, can be cured. Thus while the Mortality Study will identify those who died from melanoma prior to 1982, it will miss those who developed it during that period and survived due to early intervention.

3.1 Observed cancers in Korean War veterans

Between 1982 and 1999, a total of 3,543 cancers were identified among the male Korean War veteran population. Of these, prostate and lung cancers stand out as the most common cancers among the Korean War veterans. The 15 most common cancers among Korean War veterans are presented in Table 3.

Table 3: Most common cancers among Korean War veterans, 1982–1999

Type of cancer	Number	Per cent of all cancers
Prostate	731	20.6
Lung	672	19.0
Colon	299	8.4
Melanoma	253	7.1
Rectum	220	6.2
Head & neck	190	5.4
Bladder	162	4.6
Unknown primary site	146	4.1
Stomach	98	2.8
Larynx	95	2.7
Non-Hodgkin's lymphoma	92	2.6
Kidney	88	2.5
Leukaemia	73	2.1
Oesophagus	72	2.0
Pancreas	61	1.7
Other cancers	289	8.2
All cancers	**3,543**	100.0

3.2 Korean War veterans' cancer experience compared to the Australian community

To determine whether Korean War veterans' experience of cancer differed from that of the Australian community, standardised cancer incidence ratios (SIR) were calculated for each cancer type, under the two population Scenarios described in Section 2.2.2:

- Scenario 1 excludes veterans whose status is unknown from the at-risk population. The effect of excluding veterans whose status is unknown is that the expected number of veterans with cancer may be under-estimated if some of these veterans are still alive and residing in Australia.

  Under this Scenario, the exclusion of 'unknown status' veterans from the population at risk will result in the relative cancer incidence of Korean War veterans compared with the Australian community being over-estimated, if some of these veterans are still alive and living in Australia.
- Scenario 2 includes veterans whose status is unknown in the at-risk population, and assumes that they are still alive and residing in Australia. The effect of including veterans whose status is unknown is that the expected number of veterans with cancer may be over-estimated. This is because the veteran population under Scenario 2 is not adjusted for their possible death or migration out of Australia.

  Under this Scenario, the inclusion of 'unknown status' veterans in the population at risk will result in the relative cancer incidence of Korean War veterans compared with the Australian community being under-estimated, if some of these veterans have died or migrated out of Australia.

Results from these two Scenarios provide an upper and lower standardised incidence ratio, depending on whether or not the 'unknown status' veterans are living in Australia.

3.2.1 Scenario 1 (excluding veterans whose status is unknown)

- Under this Scenario, when the observed numbers of cancers among the Korean War veterans were compared to the expected numbers, the incidence of cancer experienced by veterans was 23% higher than that of the Australian community (Figure 3 and Table 4).
- The incidence of cancers of the head & neck, melanoma, lung, larynx, prostate, colon, rectum and oesophagus was statistically significantly higher in the veteran population than in the Australian community.
- Compared to the Australian community, the incidence of head & neck cancers was 90% higher among the veteran population, larynx cancer was 72% higher, oesophagus cancer was 54% higher and lung cancer was 42% higher. Also, among veterans, cancer of the prostate was 18% higher, colon cancer was 15% higher, rectum cancer was 25% higher, and melanoma was 18% higher than the incidence of these cancers in the Australian community.
- Many of these cancers are regarded as smoking-related cancers because they are thought to be directly attributable in part to smoking. For example, based on the age specific aetiological fractions developed by Ridolfo & Stevenson (2001), smoking contributed to 51% of head & neck cancers, 51% of oesophagus cancers, 68% of larynx cancer and 89% of lung cancer in males in 1999.

- Head & neck cancer comprises all malignant cancers of the head & neck area except skin cancers, eye cancers and brain cancers. It includes cancers of the lip, tongue, salivary glands, gum, mouth, tonsils, oesophagus, ears, nasal passage and larynx.

3.2.2 Scenario 2 (including veterans whose status is unknown)

- When the veterans with unknown status were included in the study population, the pattern is similar to Scenario 1, with elevated rates in smoking-related cancers for Korean War veterans compared to the Australian community. However, the level of elevation is lower than for Scenario 1. The overall cancer experience of the veterans was also statistically significantly higher than the Australian community experience by 13%, compared with 23% for Scenario 1 (Figure 3 and Table 4).
- Veterans experienced 76% higher incidence of head & neck cancers, 60% higher incidence of larynx cancer, 42% higher incidence of oesophagus cancer and 31% higher lung cancer rates than experienced by the Australian community. Smoking is a major risk factor associated with all these cancers.

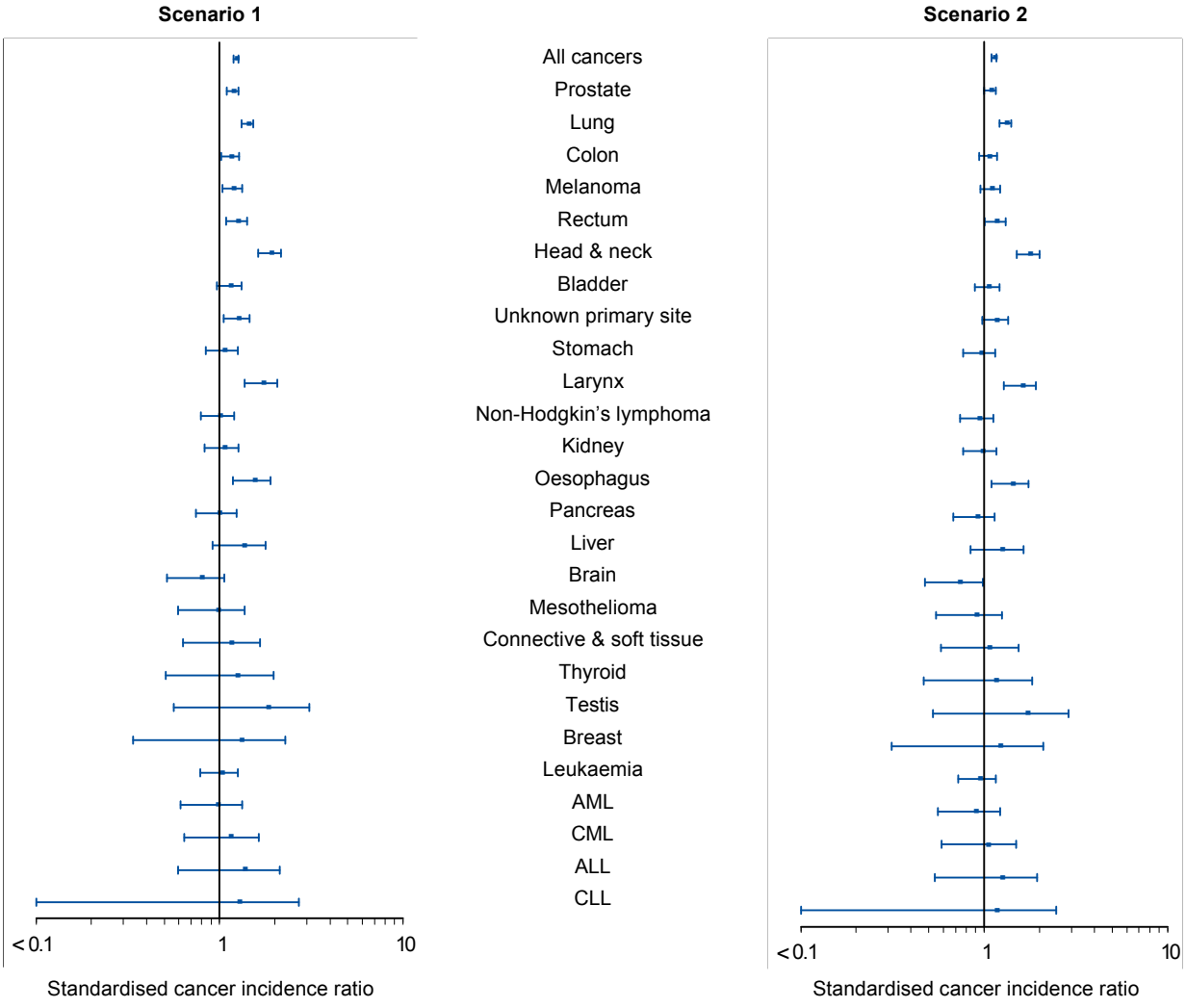

Figure 3: Standardised cancer incidence ratios and 95% confidence intervals for Korean War veterans, 1982–1999, by Scenario

Table 4: Observed and expected numbers of cancers for Korean War veterans and the standardised cancer incidence ratio (SIR), 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***3,543***	***2,877***	***1.23***	***1.19–1.27***	***3,128***	***1.13***	***1.10–1.17***
Prostate	731	619	1.18	1.09–1.27	678	1.08	1.00–1.16
Lung	672	474	1.42	1.31–1.52	515	1.31	1.21–1.40
Colon	299	260	1.15	1.02–1.28	283	1.06	0.94–1.18
Melanoma	253	215	1.18	1.03–1.32	232	1.09	0.95–1.22
Rectum	220	175	1.25	1.09–1.42	190	1.16	1.00–1.31
Head & neck	190	100	1.90	1.63–2.17	108	1.76	1.51–2.01
Bladder	162	142	1.14	0.96–1.31	155	1.05	0.88–1.21
Unknown primary site	146	116	1.26	1.06–1.47	126	1.16	0.97–1.35
Stomach	98	94	1.05	0.84–1.25	102	0.96	0.77–1.15
Larynx	95	55	1.72	1.38–2.07	60	1.60	1.28–1.92
Non-Hodgkin's lymphoma	92	92	1.00	0.80–1.21	99	0.93	0.74–1.11
Kidney	88	84	1.05	0.83–1.27	91	0.97	0.77–1.17
Oesophagus	72	47	1.54	1.18–1.89	51	1.42	1.09–1.74
Pancreas	61	61	0.99	0.74–1.24	67	0.91	0.68–1.14
Liver	37	27	1.35	0.91–1.78	30	1.24	0.84–1.64
Brain	32	40	0.79	0.52–1.07	44	0.73	0.48–0.99
Mesothelioma	25	25	0.98	0.60–1.37	28	0.90	0.55–1.26
Connective & soft tissue	19	17	1.15	0.63–1.67	18	1.06	0.58–1.54
Thyroid	11	9	1.24	0.51–1.97	10	1.15	0.47–1.83
Testis	7	4	1.83	0.56–3.10	5	1.71	0.52–2.89
Breast	8	5	1.31	0.34–2.28	6	1.21	0.31–2.10
Leukaemia	73	71	1.02	0.79–1.26	78	0.94	0.72–1.16
Chronic lymphocytic leukemia (CLL)	29	30	0.97	0.61–1.32	33	0.89	0.57–1.21
Acute myeloid leukemia (AML)	20	18	1.14	0.64–1.63	19	1.04	0.58–1.50
Chronic myeloid leukemia (CML)	12	9	1.36	0.59–2.12	10	1.24	0.54–1.95
Acute lymphoblastic leukemia (ALL)	3	2	1.27	0.00–2.70	3	1.16	0.00–2.48

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

3.3 Contribution of smoking to smoking-related cancers

Given the high standardised incidence ratios in smoking-related cancers, an analysis was conducted to examine if smoking alone could explain all of the elevation in the smoking-related cancers in Korean War veterans.

Literature on Korean War veterans' living conditions during the war indicated that extensive cigarette smoking took place, particularly among Army personnel, under confined and poorly ventilated living conditions in the latter part of the war. Cigarettes were freely available in large quantities to all ADF personnel engaged in Korea.

However, the actual prevalence of smoking amongst Korean War veterans is unknown either during the conflict or afterwards. While there is anecdotal evidence of high levels of smoking during the conflict and knowledge of the cigarette rations, there was no systematic measurement of smoking rates. Therefore this analysis provides for a range of smoking prevalence of 30–100% and generates a hypothetical number of expected cases based on these prevalence rates and estimates of attributable risk of cancer due to smoking (Table 5). Appendix A provides an explanation of the method used to derive the estimated cancer rates at various levels of prevalence.

A comparison of the expected cases of smoking-related cancers with the actual number of cases among veterans shows that head & neck cancer is the only smoking-related cancer where the elevated rates for Korean War veterans could not be fully explained by smoking. For both Scenarios, even if 100% of veterans had smoked, the actual number of cases of head & neck cancer was still higher than the expected number of cases. This indicates additional factors to smoking may have caused the elevated rates of head & neck cancer among Korean War veterans.

Of the other smoking-related cancers found to be elevated in Korean War veterans, the elevated rates could be attributed to smoking if it can be accepted that veterans had a higher prevalence of smoking than that found in the Australian community. For smoking to be the sole cause of the elevated rates, levels of smoking prevalence among veterans for each smoking-related cancer would have to be:

- oesophagus—86% smoking (Scenario 1) and 77% smoking (Scenario 2), that is, for the expected number of cases of oesophagus cancer to equal the actual number of cases of 72, veterans would have required smoking rates of 86% for Scenario 1 and 77% for Scenario 2;
- stomach—60% smoking (Scenario 1) and 33% smoking (Scenario 2);
- larynx—90% smoking (Scenario 1) and 82% smoking (Scenario 2); and
- lung—64% smoking (Scenario 1) and 59% smoking (Scenario 2).

Pancreatic cancer was the sole smoking-related cancer where no significant difference was found in the rates between Korean War veterans and the Australian community.

Table 5: Expected cancers among Korean War veterans assuming various levels of smoking prevalence

Type of cancer	Smoking risk ratio	Actual cases	Expected cases	Ratio	95% confidence interval	Expected cases							
						Smoking prevalence (%)							
						30	40	50	60	70	80	90	100
					Scenario 1								
Oesophagus	4.01	72	47	1.54	1.18–1.89	38	44	50	56	62	68	75	81
Stomach	1.41	98	94	1.05	0.84–1.25	89	92	95	98	102	105	108	111
Head & neck	4.55	190	100	1.90	1.63–2.17	79	92	106	119	133	146	160	173
Pancreas	1.86	61	61	0.99	0.74–1.24	56	60	64	68	71	75	79	83
Larynx	7.48	95	55	1.72	1.38–2.07	41	50	59	68	77	86	95	104
Lung	30.00	672	474	1.42	1.31–1.52	331	430	529	628	727	826	924	1,023
					Scenario 2								
Oesophagus	4.01	72	51	1.42	1.09–1.74	42	48	55	61	68	74	81	88
Stomach	1.41	98	102	0.96	0.77–1.15	97	100	104	107	111	114	118	121
Head & neck	4.55	190	108	1.76	1.51–2.01	85	99	114	128	143	158	172	187
Pancreas	1.86	61	67	0.91	0.68–1.14	61	65	69	74	78	82	86	90
Larynx	7.48	95	60	1.60	1.28–1.92	44	54	63	73	83	93	102	112
Lung	30.00	672	515	1.31	1.21–1.40	360	467	575	683	790	898	1,005	1,113

3.4 Cancer in veterans by type of Service

Cases of cancer among Korean War veterans were further classified by type of Service (Navy, Army and RAAF) to explore any relationship to type of Service. Again the analyses were done using the two population Scenarios (Tables 6–8). A selected group of cancers that were significantly higher than that expected in at least one type of service is presented in Figure 4.

3.4.1 Scenario 1 (excluding veterans whose status is unknown)

Navy

- Total cancer incidence was statistically significantly higher among veterans who served in the Navy during the Korean War, being 25% higher than for the Australian community (Table 6).
- Navy veterans also experienced prostate (30% higher), lung (25% higher) and head & neck (93% higher) cancers at a rate significantly higher than expected, based on the cancer incidence experienced by the Australian community.

Army

- Among those veterans who served in the Army, the observed cases of all cancers were 25% higher than expected and was statistically significantly higher than the experience of the Australian community (Table 7).
- The observed incidence of lung cancer among those who served in the Army was 59% higher than that of the Australian community, head & neck cancers were 91% higher, and cancer of the larynx was more than 100% higher. In addition, the incidence of liver cancer among Korean War veterans who served in the Army was 78% higher than for the Australian community, rectum cancer was 22% higher and oesophagus cancer was 52% higher. All the above elevated rates were statistically significant.

RAAF

- Veterans who served in the RAAF showed no difference in the incidence of total cancer compared to the Australian community. However, they showed higher rates of prostate, rectum, bladder, melanoma and head & neck cancers than for the Australian community, but only melanoma cancer was statistically significantly higher (Table 8).

3.4.2 Scenario 2 (including veterans whose status is unknown)

Navy

- The Navy personnel experienced 17% higher rates of total cancer than the Australian community. Lung and head & neck cancers observed among veterans who served in the Navy were also significantly higher (17% and 81% respectively) than that expected. Prostate cancer was also 20% higher than expected among the Navy veterans (Table 6).

Army

- Observed cases of all cancers were 13% higher among veterans who served in the Army, compared to the expected number of all cancers based on the experience of the Australian community (Table 7).
- Compared to the numbers expected, lung cancer was 44% higher, head & neck cancers were 74% higher, larynx cancer was 87% higher and liver cancer was 61% higher among those who served in the Army.

RAAF

- Veterans who served in the RAAF experienced significantly high incidence of melanoma cancer (64% higher), compared to the Australian community (Table 8).

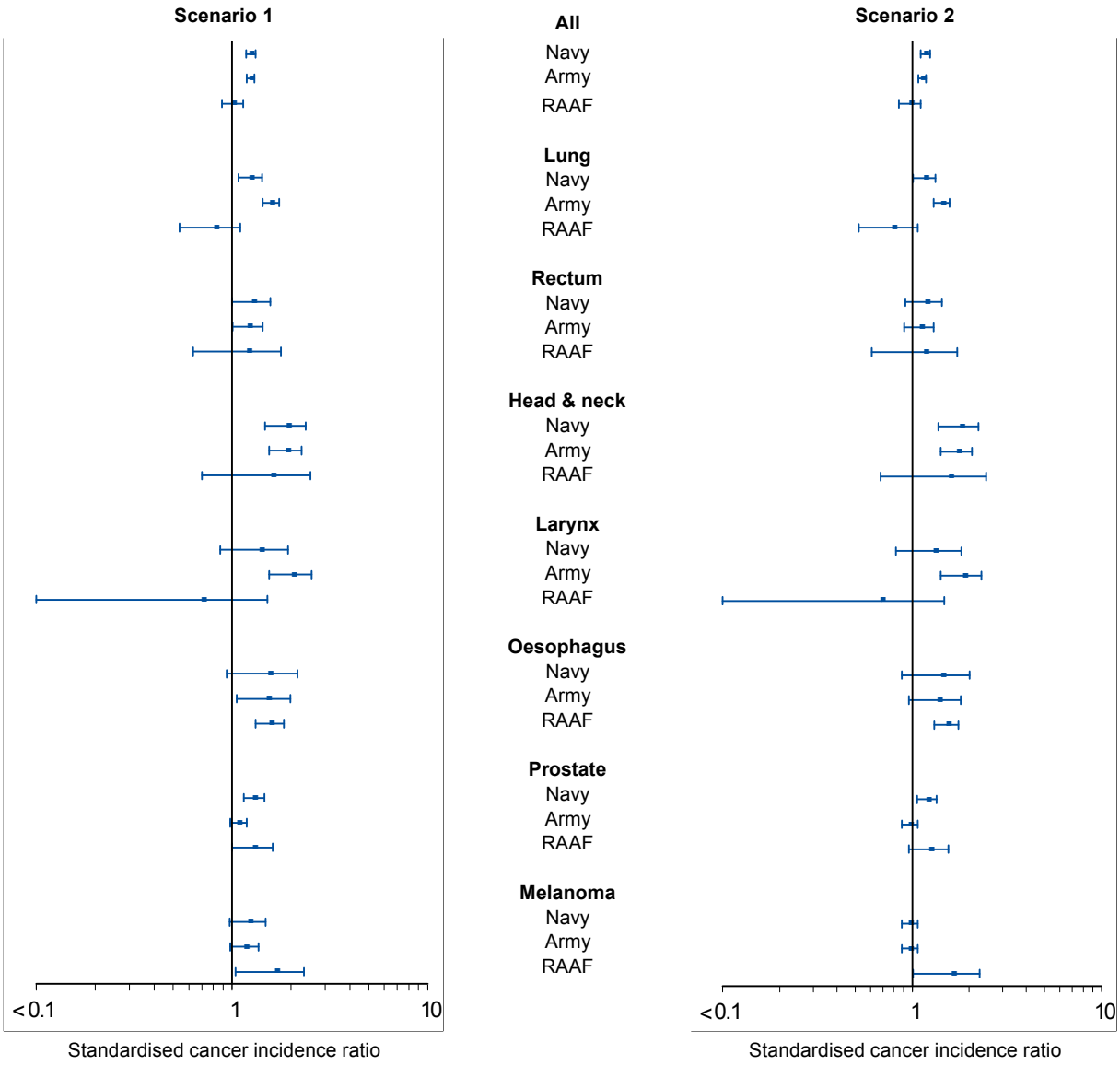

Figure 4: Standardised cancer incidence ratios and 95% confidence intervals for veterans, by service type, 1982–1999

Table 6: Observed and expected numbers of cancers for Korean War veterans who served in the Navy, and the standardised cancer incidence ratio (SIR), 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***1,238***	***988***	***1.25***	***1.18–1.32***	***1,057***	***1.17***	***1.11–1.24***
Prostate	274	211	1.30	1.15–1.46	228	1.20	1.06–1.35
Lung	203	162	1.25	1.08–1.42	174	1.17	1.01–1.33
Colon	110	90	1.23	1.00–1.46	97	1.13	0.94–1.37
Melanoma	92	75	1.23	0.97–1.48	75	1.23	0.98–1.48
Rectum	78	61	1.28	1.00–1.57	66	1.18	0.92–1.44
Head & neck	68	35	1.93	1.47–2.39	38	1.81	1.38–2.24
Bladder	63	48	1.31	0.99–1.63	52	1.22	0.92–1.52
Unknown primary site	52	42	1.23	0.90–1.57	45	1.15	0.84–1.46
Stomach	33	32	1.04	0.69–1.40	34	0.97	0.64–1.31
Non-Hodgkin's lymphoma	32	29	1.11	0.73–1.50	31	1.04	0.68–1.41
Kidney	31	29	1.07	0.69–1.44	31	1.00	0.65–1.35
Larynx	27	19	1.40	0.87–1.93	21	1.31	0.82–1.81
Pancreas	25	21	1.20	0.73–1.66	22	1.11	0.68–1.55
Oesophagus	25	16	1.55	0.94–2.16	17	1.44	0.88–2.01
Mesothelioma	14	8	1.75	0.83–2.67	9	1.64	0.78–2.50
Brain	13	14	0.92	0.42–1.42	15	0.87	0.40–1.34
Liver	9	10	0.94	0.32–1.55	10	0.88	0.31–1.46
Connective & soft tissue	7	6	1.22	0.32–2.13	6	1.15	0.30–2.00
Thyroid	5	3	1.59	0.20–2.98	3	1.50	0.19–2.82
Testis	3	2	1.94	0.00–4.14	2	1.84	0.00–3.92
Breast	1	2	0.54	0.00–1.60	2	0.51	0.00–1.51
Leukaemia	26	22	1.25	0.74–1.60	23	1.17	0.69–1.55
Chronic lymphocytic leukaemia	10	9	1.22	0.42–1.80	10	1.04	0.40–1.69
Acute myeloid leukaemia	7	5	1.30	0.34–2.26	6	1.21	0.31–2.11
Chronic myeloid leukaemia	5	3	1.70	0.21–3.18	3	1.72	0.21–3.24
Acute lymphoblastic leukaemia	2	1	2.47	0.00–5.90	1	2.53	0.00–6.04

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

Table 7: Observed and expected numbers of cancers for Korean War veterans who served in the Army, and the standardised cancer incidence ratio (SIR), 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***2,066***	***1,655***	***1.25***	***1.19–1.30***	***1,831***	***1.13***	***1.08–1.18***
Lung	435	274	1.59	1.44–1.74	302	1.44	1.30–1.57
Prostate	387	357	1.08	0.98–1.19	398	0.97	0.88–1.07
Colon	172	152	1.13	0.96–1.30	168	1.02	0.87–1.18
Melanoma	135	115	1.17	0.98–1.37	127	1.07	0.89–1.25
Rectum	125	102	1.22	1.01–1.43	113	1.11	0.91–1.30
Head & neck	110	58	1.91	1.55–2.26	63	1.74	1.41–2.07
Unknown primary site	91	72	1.27	1.01–1.53	79	1.15	0.91–1.38
Bladder	85	82	1.03	0.81–1.25	91	0.93	0.73–1.13
Larynx	65	32	2.05	1.55–2.55	35	1.87	1.41–2.32
Stomach	59	54	1.09	0.81–1.37	60	0.99	0.73–1.24
Non-Hodgkin's lymphoma	53	48	1.11	0.81–1.40	53	1.00	0.73–1.27
Kidney	51	48	1.06	0.77–1.35	53	0.96	0.70–1.22
Oesophagus	41	27	1.52	1.06–1.99	30	1.38	0.96–1.80
Pancreas	33	36	0.93	0.61–1.24	39	0.84	0.55–1.12
Liver	28	16	1.78	1.12–2.43	17	1.61	1.01–2.20
Brain	16	23	0.69	0.35–1.02	26	0.62	0.32–0.93
Connective soft tissue	12	10	1.26	0.55–1.97	11	1.14	0.50–1.79
Mesothelioma	11	13	0.83	0.34–1.32	15	0.75	0.31–1.20
Thyroid	6	5	1.18	0.24–2.12	6	1.07	0.21–1.93
Breast	5	3	1.62	0.20–3.05	3	1.47	0.18–2.76
Testis	4	3	1.58	0.03–3.13	3	1.46	0.03–2.89
Leukaemia	42	37	1.14	0.80–1.49	41	1.03	0.72–1.34
Chronic lymphocytic leukaemia	17	15	1.13	0.59–1.66	17	1.02	0.53–1.50
Acute myeloid leukaemia	11	9	1.21	0.49–1.92	10	1.09	0.45–1.73
Chronic myeloid leukaemia	7	5	1.49	0.39–2.59	5	1.34	0.35–2.33
Acute lymphoblastic leukaemia	1	1	0.80	0.00–2.37	1	0.72	0.00–2.14

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

Table 8: Observed and expected numbers of cancers for Korean War veterans who served in the RAAF, and the standardised cancer incidence ratio (SIR), 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***239***	***236***	***1.01***	***0.89–1.14***	***244***	***0.98***	***0.86–1.11***
Prostate	70	54	1.30	1.00–1.61	56	1.25	0.96–1.55
Lung	32	39	0.82	0.54–1.10	40	0.79	0.52–1.07
Melanoma	26	15	1.68	1.04–2.33	16	1.64	1.01–2.27
Colon	17	21	0.79	0.42–1.17	22	0.77	0.40–1.13
Rectum	17	14	1.21	0.63–1.78	15	1.17	0.61–1.73
Bladder	14	12	1.16	0.55–1.76	13	1.12	0.53–1.70
Head & neck	12	7	1.61	0.70–2.51	8	1.57	0.68–2.45
Non-Hodgkin's lymphoma	7	7	1.04	0.27–1.82	7	1.01	0.26–1.76
Stomach	6	8	0.76	0.15–1.37	8	0.74	0.15–1.32
Kidney	6	7	0.90	0.18–1.63	7	0.88	0.18–1.58
Oesophagus	6	4	1.58	0.32–2.84	4	1.53	0.31–2.75
Pancreas	3	5	0.59	0.00–1.25	5	0.56	0.00–1.20
Brain	3	3	0.96	0.00–2.05	3	0.94	0.00–2.00
Unknown primary site	3	10	0.29	0.00–0.62	11	0.28	0.00–0.59
Larynx	3	4	0.71	0.00–1.52	4	0.69	0.00–1.48
Testis	1	0	3.39	0.00–10.03	0	3.31	0.00–9.80
Breast	1	0	2.31	0.00–6.84	0	2.24	0.00–6.62
Liver	0	2	0.00	0.00–0.00	2	0.00	0.00–0.00
Mesothelioma	0	2	0.00	0.00–0.00	2	0.00	0.00–0.00
Connective & soft tissue	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Thyroid	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Leukaemia	5	5	0.94	0.12–1.76	6	0.90	0.11–1.70
Acute myeloid leukaemia	2	1	1.51	0.00–3.59	1	1.45	0.00–3.47
Chronic lymphocytic leukaemia	2	2	0.93	0.00–2.22	2	0.90	0.00–2.15
Chronic myeloid leukaemia	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Acute lymphoblastic leukaemia	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

3.5 Korean War veterans cancer incidence by Service type and duration of service

This section explores whether the duration of service of the Navy and Army veterans in Korea had an association with cancer rates. The duration of service in days is divided into three categories (short, medium and long duration) to reflect natural divisions in the duration of service. This division allows the mean duration of service to be substantially different in each category. The veterans' cancer experience under each duration of service category was compared, under both population Scenarios, to the expected number based on the cancer rates of the Australian community.

The analysis of cancer incidence by duration of service was not performed for RAAF veterans due to insufficient numbers of cancers leading to unstable estimates.

Overall, the Navy veterans served in Korea for a shorter period than the Army veterans. Because of this difference, the categories of duration of service used in the following analyses are different for Navy and Army (Table 9).

Table 9: Categories of duration of service for Navy and Army veterans

	Duration category					
	Short		Medium		Long	
Service type	Days	No. of veterans	Days	No. of veterans	Days	No. of veterans
Navy	1–174	430	175–294	3,784	295+	888
Army	1–345	4,189	346–389	3,657	390+	1,088

Note: Number of veterans in table includes the veterans whose status is unknown.

3.5.1 Scenario 1 (excluding veterans whose status is unknown)

Navy personnel who served in Korea

- Small numbers of Navy veterans in the short and long duration categories and the corresponding small numbers of cancers to these veterans mean that valid comparisons across duration categories are not possible. Standardised incidence ratios for the short and long duration categories have confidence intervals too wide to identify any significant differences from the standardised incidence ratios of the medium category. The results of the analysis, however, are presented in Tables 10–12. A selection of cancers that were significantly higher than expected is presented in Figure 5.
- The medium duration category is the only category with numbers large enough to show statistically significant differences in cancer incidence compared to the Australian community. This group shows similar differences to the total Navy veteran group. The incidence of all cancers is 28% higher than for the Australian community, while specific cancers showing significantly higher incidence are head & neck (116% higher), lung (35% higher), prostate (34% higher) and melanoma (33% higher).

Army personnel who served in Korea

- The observed incidence of all cancers among Army veterans was lowest for those who served in Korea for a short duration, but was still 21% higher than the incidence in the

Australian community. The observed incidence increased to 28% higher than in the Australian community for Army veterans who served for a medium duration and 26% higher for a long duration (Tables 13–15). A selection of cancers that were significantly higher than expected is presented in Figure 6.

- The incidence of lung cancer, larynx cancer and head & neck cancer increased among veterans who served in the Army during the Korean War, as the duration of service in Korea increased from short to medium (Tables 13–15). However, of these cancers, only head & neck cancer showed a higher incidence for Army veterans who served in Korea for a long duration, compared with the veterans who served for a medium duration.
- The incidence of lung cancer observed was significantly higher (43%) than in the Australian community among Korean War veterans who served in the Army for a short duration. This difference increased to be 75% higher among those who served in Korea for a medium duration, and 67% higher among those who served in Korea for a long duration.
- Larynx cancer incidence among veterans who served in Korea for a short duration is significantly higher (85%) than the expected incidence. As the duration of service increased from short to medium the observed incidence of larynx cancer increased from 85% to 126% higher than the Australian community. The observed incidence of larynx cancer was 102% higher than the expected number among those who served in Korea for a long duration.
- The observed head & neck cancer incidence progressively increased as the duration of service increased from short to long. Among veterans who served in Korea in the short duration of service category, the observed incidence of head & neck cancer was 73% higher than expected. Among those who served in Korea in the medium duration category, the observed number of head & neck cancers was 98% higher than expected while those veterans who served in Korea longest experienced 122% more head & neck cancers than expected.

3.5.2 Scenario 2 (including veterans whose status is unknown)

Navy personnel who served in Korea

- As with Scenario 1, the medium duration category is the only category with numbers of cancers large enough to show statistically significant differences in cancer incidence compared to the Australian community. This group shows similar differences to the total Navy veteran group. The incidence of all cancers is 20% higher than for the Australian community, while specific cancers showing significantly higher incidence are head & neck (104% higher), lung (26% higher) and prostate (25% higher). The observed incidence of melanoma cancer was 25% higher than expected but this excess was not statistically significant (Tables 10–12).

Army personnel who served in Korea

- Similar to the population Scenario 1, the observed incidence of all cancers, lung, larynx and head & neck cancers consistently increased as the duration of veterans' service in Korea increased from low to medium. The observed incidence of head & neck cancer continued to be higher than expected as the duration of service increased.

- Compared to the numbers expected, a significantly high incidence of all cancers (10% higher) was observed among Army personnel who served in Korea for a short duration. Those who served in Korea for a medium duration experienced 16% more cancers overall than expected, based on the Australian community standard. Although 13% more all cancers were observed among those who served longer in Korea, insufficient number of veterans in this group meant that the excess is not statistically significant (Tables 13–15).
- The observed number of lung cancers was 30% higher than expected among those who served in Korea for a short duration. It was 58% higher among those who served in Korea for a medium duration and 50% higher among those who served in Korea for a long duration.
- Head & neck cancers among veterans in the short duration of service category was 58% higher than the expected number and this rose to 81% as the duration of service of Army veterans who served in Korea increased from short to medium. This upward trend continued to be present when the duration of service increased to the high category, where the observed incidence of head & neck cancer was 103% higher than expected.
- Army veterans who served in Korea for short and medium durations experienced 70% and 106% more larynx cancer respectively than the expected numbers based on the Australian community standard.

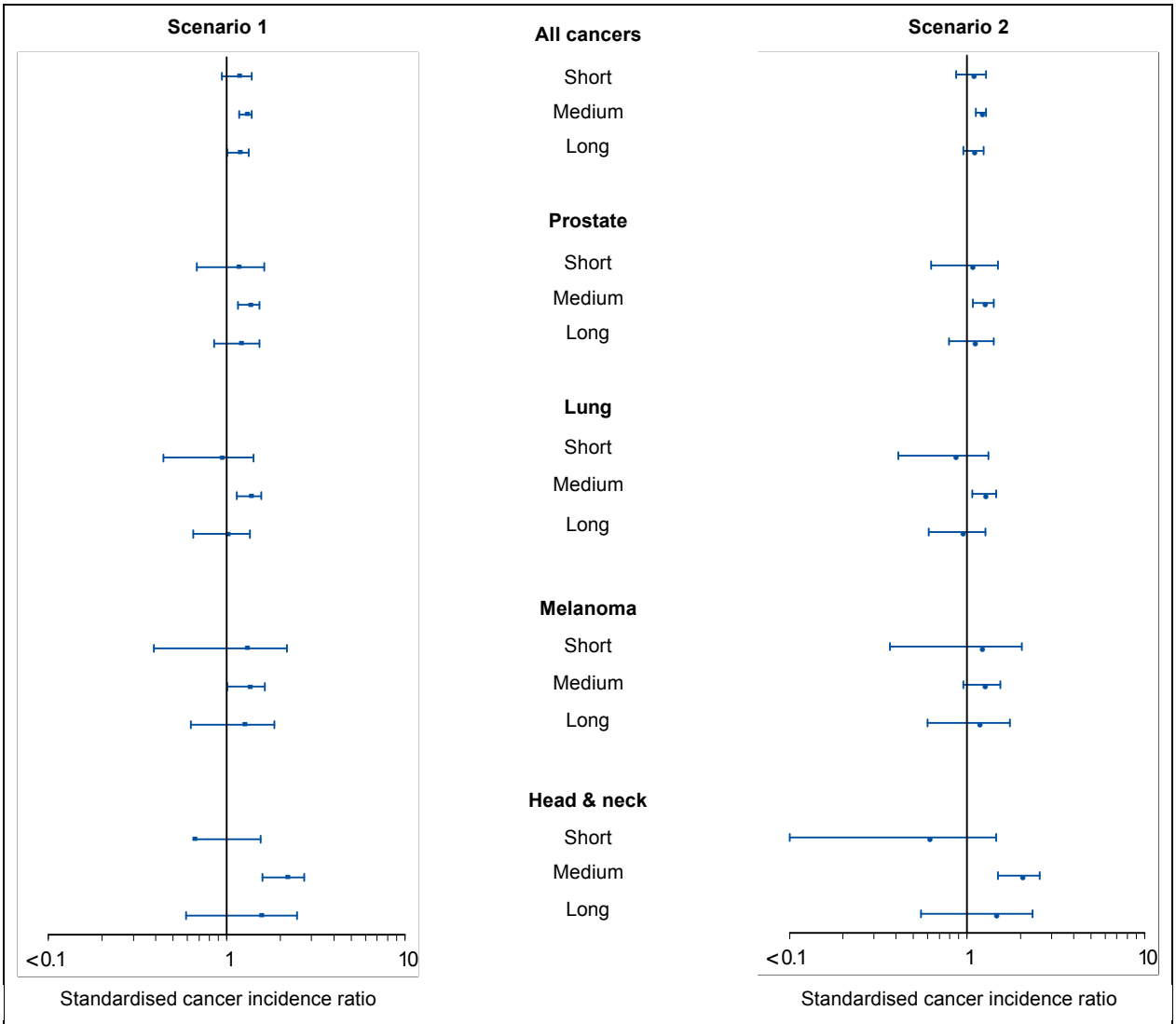

Figure 5: Standardised cancer incidence ratios and 95% confidence intervals for Navy Korean War veterans, by service duration category, 1982–1999

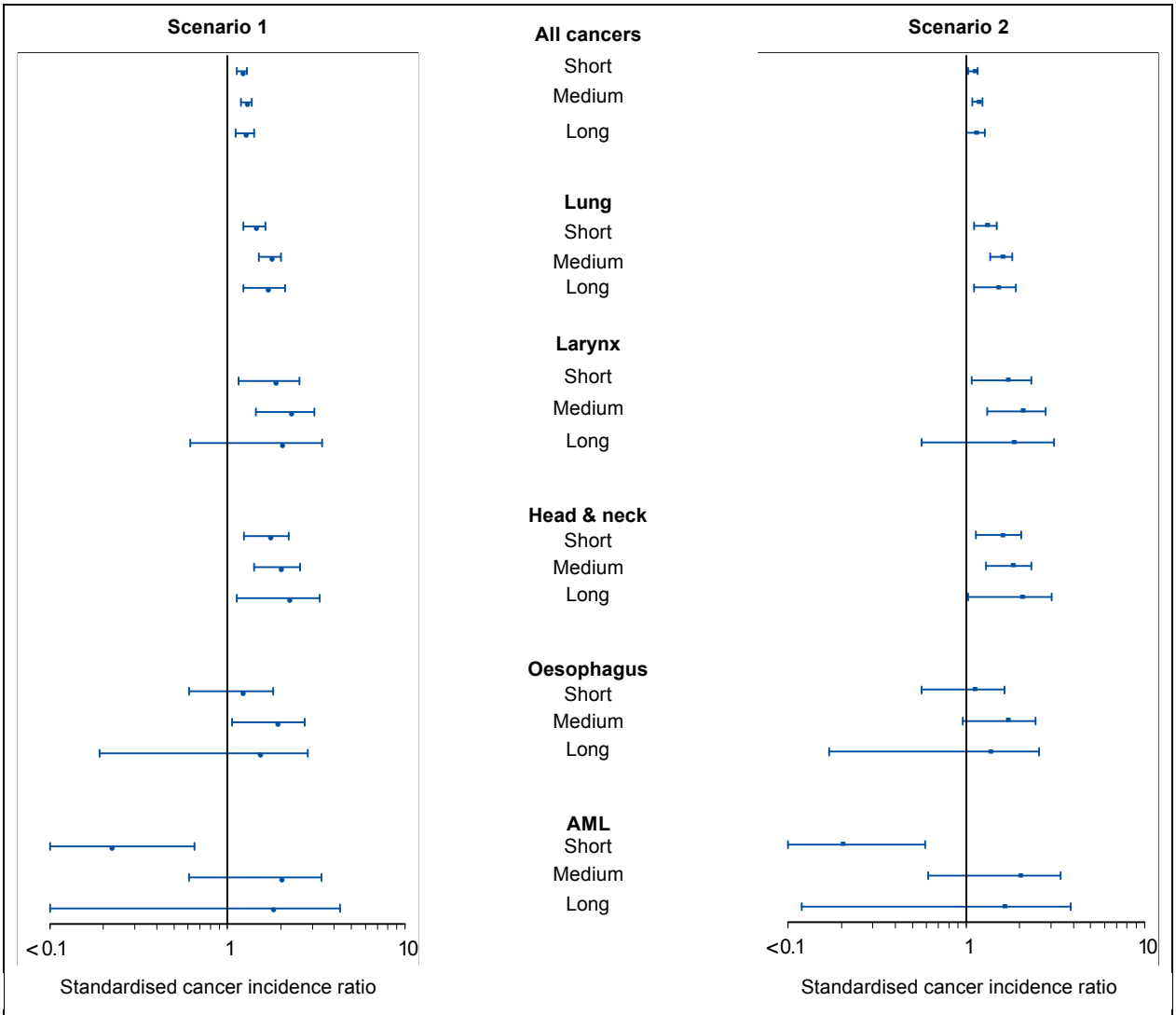

Figure 6: Standardised cancer incidence ratios and 95% confidence intervals for Army Korean War veterans, by service duration category, 1982–1999

Table 10: Observed and expected numbers of cancers and the standardised cancer incidence ratio (SIR) for Navy veterans who served in Korea in the short duration of service category, 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***105***	***91***	***1.16***	***0.94–1.38***	***97***	***1.08***	***0.87–1.28***
Prostate	23	20	1.15	0.68–1.62	22	1.06	0.63–1.50
Lung	14	15	0.93	0.44–1.41	16	0.86	0.41–1.32
Bladder	11	5	2.44	1.00–3.88	5	2.27	0.93–3.61
Colon	9	8	1.09	0.38–1.79	9	1.01	0.35–1.67
Melanoma	8	6	1.28	0.39–2.17	7	1.20	0.37–2.04
Rectum	6	6	1.08	0.22–1.94	6	1.01	0.20–1.81
Stomach	5	3	1.71	0.21–3.21	3	1.59	0.20–2.98
Pancreas	4	2	2.06	0.04–4.09	2	1.92	0.04–3.80
Oesophagus	4	1	2.68	0.05–5.31	2	2.50	0.05–4.94
Unknown primary site	3	4	0.77	0.00–1.64	4	0.72	0.00–1.53
Kidney	3	3	1.14	0.00–2.44	3	1.07	0.00–2.28
Head & neck	2	3	0.65	0.00–1.55	3	0.61	0.00–1.46
Non-Hodgkin's lymphoma	1	3	0.38	0.00–1.13	3	0.36	0.00–1.06
Brain	1	1	0.80	0.00–2.37	1	0.75	0.00–2.23
Mesothelioma	1	1	1.38	0.00–4.07	1	1.29	0.00–3.81
Connective & soft tissue	1	1	1.96	0.00–5.80	1	1.83	0.00–5.43
Larynx	0	2	0.00	0.00–0.00	2	0.00	0.00–0.00
Liver	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Thyroid	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00
Breast	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00
Testis	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00
Leukaemia	1	2	0.50	0.00–1.49	2	0.47	0.00–1.38
Chronic lymphocytic leukaemia	1	1	1.23	0.00–3.64	1	1.15	0.00–3.40
Acute myeloid leukaemia	0	0	0.00	0.00–0.00	1	0.00	0.00–0.00
Chronic myeloid leukaemia	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00
Acute lymphoblastic leukaemia	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Table 11: Observed and expected numbers of cancers and the standardised cancer incidence ratio (SIR) for Navy veterans who served in Korea in the medium duration of service category, 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***916***	***714***	***1.28***	***1.20–1.37***	***763***	***1.20***	***1.12–1.28***
Prostate	203	151	1.34	1.16–1.53	163	1.25	1.08–1.42
Lung	158	117	1.35	1.14–1.56	125	1.26	1.07–1.46
Colon	78	66	1.18	0.92–1.45	70	1.11	0.86–1.36
Melanoma	68	51	1.33	1.01–1.64	55	1.25	0.95–1.54
Head & neck	56	26	2.16	1.59–2.72	27	2.04	1.50–2.57
Rectum	55	45	1.22	0.90–1.54	48	1.15	0.84–1.45
Unknown primary site	40	30	1.31	0.91–1.72	33	1.23	0.85–1.61
Bladder	43	35	1.24	0.87–1.61	37	1.16	0.81–1.50
Kidney	21	21	0.99	0.57–1.42	23	0.93	0.53–1.33
Non-Hodgkin's lymphoma	28	21	1.34	0.85–1.84	22	1.26	0.79–1.73
Stomach	22	23	0.96	0.56–1.36	24	0.90	0.52–1.27
Larynx	20	14	1.42	0.80–2.05	15	1.34	0.75–1.93
Pancreas	18	15	1.19	0.64–1.74	16	1.11	0.60–1.62
Oesophagus	14	12	1.20	0.57–1.83	12	1.12	0.53–1.71
Mesothelioma	12	6	2.08	0.90–3.25	6	1.94	0.84–3.04
Liver	9	7	1.30	0.45–2.14	7	1.21	0.42–2.01
Brain	10	10	0.97	0.37–1.57	11	0.91	0.35–1.48
Connective & soft tissue	5	4	1.20	0.15–2.25	4	1.13	0.14–2.11
Thyroid	5	2	2.17	0.27–4.07	2	2.05	0.25–3.84
Testis	2	1	1.70	0.00–4.05	1	1.62	0.00–3.86
Breast	1	1	0.74	0.00–2.20	1	0.70	0.00–2.07
Leukaemia	19	16	1.22	0.67–1.76	17	1.20	0.63–1.65
Chronic lymphocytic leukaemia	7	7	1.08	0.28–1.87	7	1.01	0.26–1.76
Acute myeloid leukaemia	6	4	1.54	0.31–2.78	4	1.44	0.29–2.59
Chronic myeloid leukaemia	3	2	1.55	0.00–3.31	2	1.45	0.00–3.09
Acute lymphoblastic leukaemia	2	1	3.68	0.00–8.79	1	3.45	0.00–8.23

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

Table 12: Observed and expected numbers of cancers and the standardised cancer incidence ratio (SIR) for Navy veterans who served in Korea in the long duration of service category, 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***217***	***186***	***1.17***	***1.01–1.32***	***198***	***1.09***	***0.95–1.24***
Prostate	48	40	1.19	0.85–1.52	43	1.10	0.79–1.42
Lung	31	31	1.00	0.65–1.36	33	0.94	0.61–1.27
Colon	23	17	1.35	0.80–1.90	18	1.26	0.75–1.78
Rectum	17	12	1.47	0.77–2.18	12	1.38	0.73–2.04
Melanoma	16	13	1.24	0.63–1.85	14	1.17	0.60–1.74
Head & neck	10	7	1.54	0.58–2.49	7	1.45	0.55–2.35
Oesophagus	7	3	2.30	0.60–4.00	3	2.15	0.56–3.74
Bladder	9	9	0.99	0.34–1.63	10	0.92	0.32–1.52
Kidney	7	5	1.29	0.33–2.25	6	1.21	0.31–2.11
Unknown primary site	9	8	1.13	0.39–1.87	8	1.06	0.37–1.75
Stomach	6	6	1.01	0.20–1.82	6	0.95	0.19–1.70
Non-Hodgkin's lymphoma	3	5	0.56	0.00–1.20	6	0.53	0.00–1.13
Larynx	7	4	1.94	0.50–3.37	4	1.82	0.47–3.18
Brain	2	3	0.77	0.00–1.85	3	0.73	0.00–1.73
Pancreas	3	4	0.76	0.00–1.62	4	0.71	0.00–1.52
Testis	1	0	3.92	0.00–11.61	0	3.72	0.00–11.00
Mesothelioma	1	2	0.66	0.00–1.96	2	0.62	0.00–1.84
Connective & soft tissue	1	1	0.95	0.00–2.82	1	0.89	0.00–2.65
Liver	0	2	0.00	0.00–0.00	2	0.00	0.00–0.00
Breast	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00
Thyroid	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Leukaemia	6	4	1.48	0.29–2.66	4	1.38	0.28–2.48
Chronic lymphocytic leukaemia	2	2	1.19	0.00–2.84	2	1.12	0.00–2.66
Chronic myeloid leukaemia	2	1	3.85	0.00–9.19	1	3.58	0.00–8.54
Acute myeloid leukaemia	1	1	0.98	0.00–2.91	1	0.92	0.00–2.72
Acute lymphoblastic leukaemia	0	0	0.00	0.00–0.00	0	0.00	0.00–0.00

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

Table 13: Observed and expected numbers of cancers and the standardised cancer incidence ratio (SIR) for Army veterans who served in Korea in the short duration of service category, 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***981***	***813***	***1.21***	***1.13–1.28***	***896***	***1.10***	***1.03–1.16***
Prostate	199	179	1.11	0.96–1.27	198	1.00	0.86–1.14
Lung	192	135	1.43	1.22–1.63	148	1.30	1.11–1.48
Colon	89	75	1.19	0.95–1.44	82	1.08	0.86–1.31
Melanoma	69	55	1.25	0.96–1.55	60	1.14	0.87–1.41
Rectum	59	50	1.19	0.89–1.50	54	1.08	0.81–1.36
Head & neck	47	27	1.73	1.23–2.22	30	1.58	1.13–2.04
Unknown primary site	42	36	1.18	0.82–1.53	39	1.07	0.74–1.39
Bladder	39	41	0.95	0.65–1.24	45	0.86	0.59–1.13
Stomach	33	27	1.22	0.80–1.63	30	1.11	0.73–1.48
Non-Hodgkin's lymphoma	30	23	1.28	0.82–1.74	26	1.17	0.75–1.58
Larynx	28	15	1.85	1.17–2.54	17	1.70	1.07–2.32
Kidney	27	23	1.16	0.72–1.59	26	1.05	0.66–1.45
Pancreas	16	18	0.90	0.46–1.35	19	0.82	0.42–1.22
Oesophagus	16	13	1.21	0.62–1.81	15	1.10	0.56–1.64
Liver	14	8	1.85	0.88–2.82	8	1.68	0.80–2.56
Brain	7	11	0.63	0.16–1.09	12	0.57	0.15–1.00
Mesothelioma	5	6	0.78	0.10–1.47	7	0.71	0.09–1.33
Connective & soft tissue	5	5	1.08	0.13–2.02	5	0.98	0.12–1.84
Testis	2	1	1.70	0.00–4.06	1	1.57	0.00–3.74
Thyroid	2	2	0.83	0.00–1.97	3	0.76	0.00–1.80
Breast	1	2	0.66	0.00–1.96	2	0.60	0.00–1.79
Leukaemia	17	18	0.93	0.49–1.37	20	0.84	0.44–1.24
Chronic myeloid leukaemia	6	2	2.48	0.50–4.47	3	2.25	0.45–4.04
Chronic lymphocytic leukaemia	6	7	0.81	0.16–1.46	8	0.73	0.15–1.32
Acute myeloid leukaemia	1	5	0.22	0.00–0.65	5	0.20	0.00–0.59
Acute lymphoblastic leukaemia	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

Table 14: Observed and expected numbers of cancers and the standardised cancer incidence ratio (SIR) for Army veterans who served in Korea in the medium duration of service category, 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***828***	***647***	***1.28***	***1.19–1.37***	***717***	***1.16***	***1.08–1.23***
Lung	187	107	1.75	1.50–2.01	118	1.58	1.36–1.81
Prostate	131	136	0.96	0.80–1.13	152	0.86	0.71–1.01
Colon	65	60	1.09	0.82–1.35	66	0.98	0.75–1.22
Rectum	53	41	1.30	0.95–1.65	45	1.17	0.86–1.49
Melanoma	50	47	1.07	0.78–1.37	51	0.97	0.70–1.24
Head & neck	47	24	1.98	1.42–2.55	26	1.81	1.29–2.32
Unknown primary	39	28	1.41	0.97–1.86	31	1.28	0.88–1.68
Bladder	38	31	1.21	0.82–1.59	35	1.09	0.74–1.43
Larynx	29	13	2.26	1.44–3.08	14	2.06	1.31–2.80
Oesophagus	20	11	1.89	1.06–2.71	12	1.70	0.96–2.45
Kidney	19	19	0.99	0.54–1.43	21	0.89	0.49–1.30
Non-Hodgkin's lymphoma	18	19	0.95	0.51–1.39	21	0.86	0.46–1.26
Stomach	18	21	0.87	0.47–1.27	23	0.78	0.42–1.14
Pancreas	13	14	0.95	0.43–1.46	15	0.85	0.39–1.32
Liver	9	6	1.43	0.49–2.36	7	1.29	0.45–2.13
Brain	7	9	0.74	0.19–1.29	10	0.67	0.17–1.17
Connective & soft tissue	7	4	1.85	0.48–3.22	4	1.68	0.43–2.92
Mesothelioma	5	5	0.95	0.12–1.78	6	0.86	0.11–1.61
Thyroid	4	2	1.92	0.04–3.80	2	1.75	0.03–3.46
Breast	3	1	2.47	0.00–5.25	1	2.23	0.00–4.75
Testis	1	1	0.92	0.00–2.72	1	0.85	0.00–2.51
Leukaemia	20	14	1.41	0.79–2.03	16	1.27	0.71–1.83
Chronic lymphocytic leukaemia	9	6	1.52	0.53–2.51	7	1.37	0.48–2.27
Acute myeloid leukaemia	8	4	2.00	0.61–3.39	4	2.00	0.61–3.39
Chronic myeloid leukaemia	1	2	0.50	0.00–1.48	2	0.50	0.00–0.48
Acute lymphoblastic leukaemia	0	0	0.00	0.00–0.00	1	0.00	0.00–0.00

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

Table 15: Observed and expected numbers of cancers and the standardised cancer incidence ratio (SIR) for Army veterans who served in Korea in the long duration of service category, 1982–1999

		Scenario 1 (excluding veterans whose status is unknown)			Scenario 2 (including veterans whose status is unknown)		
Type of cancer	Observed number	Expected number	Ratio[(a)]	95% confidence interval	Expected number	Ratio[(a)]	95% confidence interval
All cancers	***255***	***202***	***1.26***	***1.11–1.41***	***225***	***1.13***	***1.00–1.27***
Prostate	57	43	1.31	0.97–1.66	49	1.17	0.87–1.48
Lung	56	34	1.67	1.23–2.10	37	1.50	1.11–1.90
Colon	18	19	0.97	0.52–1.41	21	0.87	0.47–1.27
Melanoma	16	14	1.12	0.57–1.67	16	1.02	0.52–1.52
Head & neck	16	7	2.22	1.13–3.31	8	2.03	1.03–3.02
Rectum	13	13	1.03	0.47–1.58	14	0.93	0.42–1.43
Unknown primary site	10	9	1.15	0.44–1.87	10	1.04	0.39–1.68
Bladder	8	10	0.80	0.25–1.36	11	0.72	0.22–1.22
Larynx	8	4	2.02	0.62–3.42	4	1.84	0.56–3.11
Stomach	8	7	1.22	0.38–2.07	7	1.10	0.34–1.86
Non-Hodgkin's lymphoma	5	6	0.85	0.11–1.60	6	0.77	0.10–1.45
Oesophagus	5	3	1.51	0.19–2.84	4	1.36	0.17–2.56
Kidney	5	6	0.84	0.10–1.58	7	0.76	0.09–1.43
Liver	5	2	2.53	0.31–4.75	2	2.29	0.28–4.29
Pancreas	4	4	0.93	0.02–1.84	5	0.83	0.02–1.65
Brain	2	3	0.69	0.00–1.66	3	0.63	0.00–1.51
Mesothelioma	1	2	0.61	0.00–1.81	2	0.55	0.00–1.64
Testis	1	0	3.21	0.00–9.49	0	2.97	0.00–8.78
Breast	1	0	2.67	0.00–7.91	0	2.42	0.00–7.15
Connective & soft tissue	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Thyroid	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00
Leukaemia	5	4	1.12	0.14–2.11	5	1.01	0.12–1.90
Acute myeloid leukaemia	2	1	1.80	0.00–4.30	1	1.62	0.00–3.86
Chronic lymphocytic leukaemia	2	2	1.08	0.00–2.58	2	0.98	0.00–2.34
Acute lymphoblastic leukaemia	1	0	0.00	0.00–0.00	0	0.00	0.00–0.00
Chronic myeloid leukaemia	0	1	0.00	0.00–0.00	1	0.00	0.00–0.00

(a) The expected numbers used to calculate the ratios are unrounded numbers, rather than the integers shown in the table.

Note: The shaded rows indicate that the incidence of these cancers is significantly higher among Korean War veterans than in the general Australian population.

3.6 Cancer mortality of Korean War veterans

This section gives a brief insight into the effect of incidence of cancer in veterans on their likelihood of dying. This is not an analysis of overall mortality experience of the Korean War veterans but an exploration of the cancers experienced by veterans that led to mortality during the study period, 1982–1999. The overall mortality experience of Korean War veterans is the subject of a separate study.

- A further analysis of the 3,543 cases of cancers diagnosed among 3,201 Korean War veterans during the period 1982–1999 shows that 1,886 (58.9%) of these veterans had died. Of those who died, the underlying cause of death in 71% of the deaths was the same cancer suffered by the veterans (Table 16).
- There were 669 veterans diagnosed with lung cancer during the period under study. Of those, 576 (86%) had died by 1999 and 89% of these deaths were due to lung cancer. On average, those veterans with lung cancer died within 2 years of diagnosis.
- Of the other smoking-related cancers, head & neck cancer contributed 59% of the deaths of veterans who had experienced this cancer, larynx cancer was responsible for 38% of the deaths of veterans with this cancer, and cancer of the oesophagus was the underlying cause in 80% of deaths of veterans who had this cancer.
- Colon cancer was the underlying cause of death in 71% of the colon cancer cases, while 43% of the veterans with rectum cancer died of the same cancer.
- Of the 73 veterans diagnosed with leukaemia, 63% had died during the study period. Leukaemia was responsible for 72% of the deaths of veterans who suffered from leukaemia.
- Other cancers that contributed significantly to deaths were pancreas, liver and brain cancers.

Table 16: Deaths of Korean War veterans diagnosed with cancer, by cancer incidence and cause of death, 1982–1999

	Veterans with cancer	Deaths of veterans diagnosed with cancer		Veterans died of the same cancer		Veterans still alive	
	Number[(a)]	Number	Per cent	Number	Per cent	Number	Per cent
All cancers	***3,201***	***1,886***	***58.9***	***1,337***	***70.9***	***1,315***	***41.1***
Prostate	730	238	32.6	112	47.1	492	67.4
Lung	669	576	86.1	512	88.9	93	13.9
Colon	297	139	46.8	99	71.2	158	53.2
Melanoma	253	84	33.2	34	40.5	169	66.8
Rectum	220	124	56.4	54	43.5	96	43.6
Head & neck	185	129	69.7	76	58.9	56	30.3
Bladder	159	70	44.0	28	40.0	89	56.0
Unknown primary site	146	130	89.0	83	63.8	16	11.0
Stomach	98	77	78.6	51	66.2	21	21.4
Larynx	94	45	47.9	17	37.8	49	52.1
Non-Hodgkin's Lymphoma	92	55	59.8	34	61.8	37	40.2
Kidney	88	51	58.0	34	66.7	37	42.0
Oesophagus	72	61	84.7	49	80.3	11	15.3
Pancreas	61	54	88.5	48	88.9	7	11.5
Liver	37	33	89.2	28	84.8	4	10.8
Brain	32	29	90.6	27	93.1	3	9.4
Mesothelioma	25	22	88.0	1	4.5	3	12.0
Connective & soft tissue	19	10	52.6	5	50.0	9	47.4
Thyroid	11	6	54.5	2	33.3	5	45.5
Testis	8	5	62.5	3	60.0	3	37.5
Breast	7	3	42.9	2	66.7	4	57.1
Leukaemia	73	46	63.0	33	71.7	27	37.0
Chronic lymphocytic leukaemia	29	14	48.3	8	57.1	15	51.7
Acute myeloid leukaemia	20	15	75.0	12	80.0	5	25.0
Chronic myeloid leukaemia	12	10	83.3	4	40.0	2	16.7
Acute lymphoblastic leukaemia	3	2	66.7	2	100.0	1	33.3

(a) Number of cancers in this column refers to the number of veterans with cancer rather than the number of cancers experienced by veterans, as is reported in other chapters of this report.

Two Gloster Meteor F.8 fighters take off from Kimpo, South Korea, 1952. AWM PO660/33/01

Ice formed along the deck of the frigate HMAS *Condamine* during winter in Korea, 1952. AWM 306776